



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.        | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------------|------------------|
| 10/005,429   | 12/03/2001  | Vincent Sewalt       | 5718-119 (035718/241421)   | 8554             |
| 826  | 7590        | 02/23/2004           | EXAMINER<br>BAUM, STUART F |                  |
| ALSTON & BIRD LLP<br>BANK OF AMERICA PLAZA<br>101 SOUTH TRYON STREET, SUITE 4000<br>CHARLOTTE, NC 28280-4000 |             |                      | ART UNIT<br>1638           | PAPER NUMBER     |

DATE MAILED: 02/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/005,429             | SEWALT ET AL.       |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Stuart F. Baum         | 1638                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 December 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-61 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1 and 2, drawn to an isolated polypeptide, classified in class 530, subclass 300 for example.

**If Applicant elects Invention I, Applicant is also to elect one polypeptide sequence from claims 1 or 2.**

- II. Claims 3-12, 14-22, 24-26, 28-29, 31-35, 37-38, 40-45, 47-52, 54-56, 58-61, drawn to an isolated nucleotide molecule in sense orientation, expression cassette, transformed plant, a method for altering the disulfide status of storage proteins, a method for improving the digestibility of grain, a method for altering grain hardness, a method for improving grain for processing, and a method for altering the disulfide status of storage proteins, classified in class 435, subclass 468 for example.

**If Applicant elects Invention II, Applicant is also to elect one DNA sequence and one corresponding amino acid sequence that is encoded by the elected DNA sequence. Applicant is to elect the sequences from the list of sequences as specified in claims 3 or 4. Sequences are to be specified using SEQ ID NO:'s.**

- III. Claims 13, 27, 39, and 57, drawn to a transformed plant comprising a promoter operably linked to a nucleotide sequence in antisense orientation, classified in class 800, subclass 285 for example.

Art Unit: 1638

**If Applicant elects Invention III, Applicant is also to elect one DNA sequence and one corresponding amino acid sequence that is encoded by the elected DNA sequence. Applicant is to elect the sequences from the list of sequences as specified in claims 3 or 4. Sequences are to be specified using SEQ ID NO:'s.**

- IV. Claims 23, 30, 36, 46, and 53, drawn to a method for altering the disulfide status of storage protein comprising transforming a plant with two sequences, classified in class 800, subclass 278 for example.

**If Applicant elects Invention IV, Applicant is also to elect two DNA sequences and two corresponding amino acid sequences that are encoded by the elected DNA sequences. Applicant is to elect the sequences from the list of sequences as specified in claims 3 or 4. Sequences are to be specified using SEQ ID NO:'s.**

2. Applicant is reminded that nucleotide sequences encoding different proteins are structurally distinct chemical compounds and are unrelated to one another, as are different proteins structurally distinct chemical compounds and unrelated to one another. These sequences are thus deemed to normally constitute **independent and distinct** inventions within the meaning of 35 U.S.C. 121. Absent evidence to the contrary, each such sequence is presumed to represent an independent and distinct invention, subject to a restriction requirement pursuant to 35 U.S.C. 121 and 37 CFR 1.141 et seq (see MPEP 803.04 and 2434). This requirement is not to be construed as a requirement for an election of species, since each nucleotide and amino acid sequence is not a member of a single genus of invention, but constitutes an independent and patentably distinct invention.

3. Invention I and Inventions II-IV are distinct from each other because the proteins of Invention I could be made by a process other than the expression of the gene of Invention II, III,

Art Unit: 1638

or IV, such as chemical synthesis or purification from the natural source, and the DNA of Invention II, III, or IV may be used for a process other than the production of a protein, such as a nucleic acid hybridization. Lastly, DNA and protein differ in composition, structure and function.

4. Inventions I, II and IV are distinct from Invention III because Applicants are claiming a nucleic acid molecules in antisense orientation. It is recognized in the art, that nucleic acid molecules in antisense orientation are used to down-regulate the expression or reduce the activity of a specific protein whereas over-expressing a nucleic acid molecule in sense orientation is used to upregulate or increase the activity of a specific protein. The two different sequences, i.e., antisense and sense, utilize different mechanism and therefore require an independent search and examination.

5. Inventions IV and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the presence of each of the subcombinations separately claimed, which in the instant application are the different nucleotide sequences, serves as evidence that the combinations do not rely solely upon any single subcombination as claimed for their own patentability. The subcombination has separate utility in any of the different combinations.

6. Inventions III and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different

Art Unit: 1638

functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are distinct from each other because the method steps are distinct from each other.

Examples of divergent method steps are expression of antisense molecules to down-regulate the activity of a protein of Invention III and the over-expression of two nucleic acid molecules to up-regulate the activity of two separate polypeptides of Invention IV.

7. Because these inventions are distinct for the reasons given above, have acquired a separate status in the art as shown by their different classification, and the literature and sequence searches required for each of the Groups are not required for another of the Groups, restriction for examination purposes as indicated is proper.

8. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

9. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stuart F. Baum whose telephone number is 571-272-0792. The examiner can normally be reached on M-F 8:30-5:00.

Art Unit: 1638

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on 571-272-0804. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

A handwritten signature in black ink, appearing to read 'Stuart F. Baum', with a large circular flourish at the beginning and a long horizontal stroke extending to the right.

Stuart F. Baum Ph.D.

Patent Examiner

Art Unit 1638

February 9, 2004